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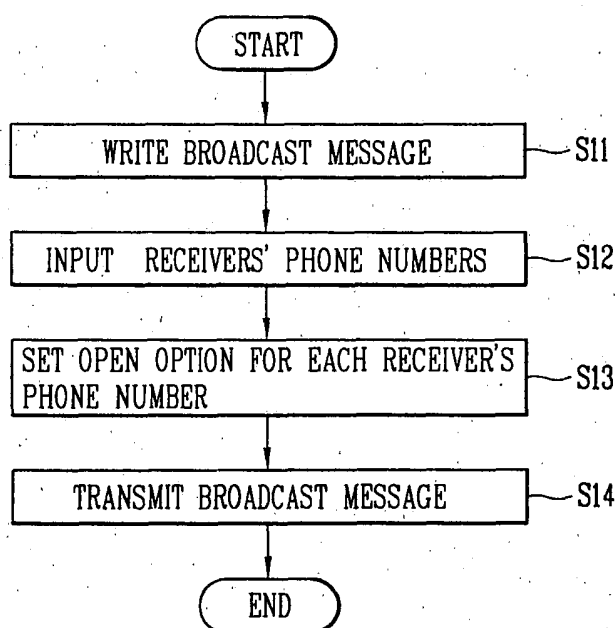
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(54) **Broadcast message service method in mobile communication terminal**

(57) A broadcast message service method in a mobile communication terminal comprises: a transmission process for inputting a broadcast message and receivers' phone numbers and setting an open option for each receiver's phone number; and a reception process for receiving the broadcast message and thus certifying the message content and the opened receivers' phone

numbers. According to this, other receivers' phone numbers to which the same broadcast message has been transmitted or their information can be certified, and phone numbers can be stored or edited by a receiver's arbitrary handling. Also, the receiver can transmit a reply short message, thereby increasing the user's convenience.

FIG. 3



Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a short message service in a mobile communication terminal, and more particularly, to a broadcast message service method in a mobile communication terminal for supporting a broadcast transmission service.

2. Description of the Related Art

[0002] As a mobile communication terminal fast spreads, the population using a short message service (SMS) is rapidly increasing. The short message can be transmitted to an opposition party's mobile communication terminal almost simultaneously with a transmission timing, thereby being recognized as an important communication means with a voice communication service using a mobile communication terminal.

[0003] The short message service refers to an interactive service capable of transmitting and receiving a short text message regardless of a calling between mobile communication terminals. That is, the short message service enables a mobile communication service subscriber to receive a message through a public switched telephone network (PSTN), a data communication network, or an Internet when another mobile communication service subscriber or himself transmits a short message of approximately 80 bytes.

[0004] Generally, the short message service is performed between one call originator and one call receiver.

[0005] Therefore, in order to transmit a short message of the same content to a plurality of receivers by an originator, the same content has to be inputted whenever a message is transmitted to each receiver, or repeatedly a stored message has to be called back by a key adjustment and a receiver's phone number has to be inputted.

[0006] So as to solve said problem, in a short message transmitting method in a mobile communication terminal according to the related art, a broadcast message function for simultaneously transmitting a text message to a plurality of receivers is included.

[0007] Figures 1A, 1B, 1C, and 1D are exemplary views showing a broadcast message transmitting method in a mobile communication terminal in accordance with the related art, and Figures 2A, 2B, and 2C are exemplary views showing a broadcast message receiving method in a mobile communication terminal in accordance with the related art.

[0008] As shown in Figure 1A, a user enters a message menu of a mobile communication terminal by a key adjustment, and selects an outbox item in the message menu. According to this, as shown in Figure 1B, predetermined sub items are displayed. Then, the user se-

lects a new message item among the sub items. If the user selects the new message item, an input window for inputting a message content to be transmitted to a plurality of receivers is displayed as shown in Figure 1C and thereby the user inputs a message content by a key adjustment. If the user finishes the message input and presses a OK key, a phone number window for inputting each receiver's phone number to which the broadcast message will be transmitted is displayed as shown in Figure 1D. According to this, the user inputs each receiver's phone number and then transmits the message. At this time, the broadcast message is sequentially transmitted to each receiver's phone number.

[0009] When a mobile communication terminal receives the broadcast message which has been transmitted by said process, a user enters the message menu and then selects an inbox item among sub items as shown in Figure 2A.

[0010] If the inbox item is selected, a list of received messages is displayed as shown in Figure 2B. In the list, a message which has been received the most recently is selected and a content of the message is certified as shown in Figure 2C. Herein, the message is displayed not only with a content but also with a transmitter's phone number and an transmitted time.

[0011] However, in the broadcast message service method in a mobile communication terminal according to the related art, it is impossible for a receiver to know whether a received message is a broadcast message or not.

[0012] Also, in the broadcast message service method in a mobile communication terminal according to the related art, it is impossible for a receiver to know other receivers' phone numbers to which the same broadcast message has been transmitted.

SUMMARY OF THE INVENTION

[0013] Therefore, an object of the present invention is to provide a broadcast message service method in a mobile communication terminal, in which an open option for each receiver's phone number is set and each receiver can certify the opened phone numbers.

[0014] Another object of the present invention is to provide a broadcast message service method in a mobile communication terminal, in which a receiver can arbitrarily store or edit opened phone numbers at the time of receiving a broadcast message.

[0015] To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described herein, there is provided a broadcast message service method in a mobile communication terminal comprising: a transmission process for inputting a broadcast message and receivers' phone numbers and setting an open option for each receiver's phone number; and a reception process for receiving the broadcast message and thus certifying the message content and the opened receivers' phone

numbers.

[0016] According to a second characteristic, the broadcast message service method in a mobile communication terminal comprises: inputting a short message content and receivers' phone numbers; inputting an open option for each receiver's phone number; and transmitting the short message to each receiver.

[0017] According to a third characteristic, the broadcast message service method in a mobile communication terminal comprises: judging whether a received short message is a broadcast message; if the received message is a broadcast message, detecting a message content, a transmitter's phone number, and opened receivers' phone numbers; and displaying the detected contents on a display unit of the mobile communication terminal.

[0018] According to a fourth characteristic, the broadcast message service method in a mobile communication terminal comprises: judging whether a received short message is a broadcast message; if the received message is a broadcast message, displaying a message content, a transmitter's phone number, and opened receivers' phone numbers on a display unit of the mobile communication terminal; selectively performing a reply for the received short message; and storing phone numbers selected from the transmitter's phone number and a list for the opened receivers' phone numbers.

[0019] The foregoing and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

[0021] In the drawings:

Figures 1A, 1B, 1C, and 1D are exemplary views showing a broadcast message transmitting method in a mobile communication terminal in accordance with the related art;

Figures 2A, 2B, and 2C are exemplary views showing a broadcast message receiving method in a mobile communication terminal in accordance with the related art;

Figure 3 is a flow chart showing a broadcast message transmitting method in a mobile communication terminal according to the present invention; Figures 4A and 4B are exemplary views showing one embodiment of a broadcast message transmitting process in a mobile communication terminal ac-

cording to the present invention;

Figure 5 is a flow chart showing a broadcast message receiving process in a mobile communication terminal according to the present invention; and Figures 6A, 6B, and 6C are exemplary views showing a broadcast message receiving process in a mobile communication terminal according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

[0023] Hereinafter, a broadcast message service method according to the present invention will be explained as follows.

[0024] The broadcast message service method according to the present invention comprises: a transmitter's writing a broadcast message, selecting receivers' phone numbers, setting an open option for each phone number, and thus transmitting the broadcast message; and receiving the broadcast message and thus certifying the message content and the opened phone numbers.

[0025] At this time, a receiver can perform a reply for the opened phone numbers or can store each phone number in a mobile communication terminal.

[0026] In said transmitting process, a data frame including a text message and a list of the opened phone numbers has to be transmitted. However, in the mobile communication system according to the related art, an amount of text messages and a data amount of phone numbers which can be used as a call back number are limited. Therefore, in order to apply the broadcast message service method in a mobile communication terminal according to the present invention, a new data frame for transmitting the list of the opened phone numbers has to be added to the mobile communication system according to the related art.

[0027] That is, two data frames, a data frame including the message content and the transmitter's phone number as the message according to the related art, and a data frame for transmitting the opened phone numbers are required. Herein, the data frame for transmitting the opened phone numbers uses a margin field among fields for transmitting the text message.

[0028] If a broadcast message according to the present invention is received by using a mobile communication terminal according to the related art, opened receiver's phone numbers can not be certified even though the text message content and the transmitter's phone number can be certified.

[0029] Figure 3 is a flow chart showing a broadcast message transmitting method in mobile communication terminal according to the present invention.

[0030] As shown, a user writes a broadcast message

to be transmitted by a key adjustment (S11), and inputs receivers' phone numbers (S12). Then, an open option for each inputted receiver's phone number is set (S13), and transmits a data frame composed of the broadcast message content, the transmitter's phone number, and the opened receivers' phone numbers (S14).

[0031] Figures 4A and 4B are exemplary views showing one embodiment of a broadcast message transmitting process in a mobile communication terminal according to the present invention.

[0032] Referring to Figures 4A and 4B, operation of the present invention will be explained in more detail.

[0033] First, a user enters a predetermined menu, that is, a message menu by a key adjustment of a mobile communication terminal, and then selects an outbox item among sub items.

[0034] If the user selects a new message item among sub items constituting the outbox item, a message input window is displayed as shown in Figure 4A. According to this, the user inputs a text message content to be transmitted.

[0035] When the user presses a certification key after inputting the text message, a phone number input window for inputting receivers' phone numbers to which the text message will be transmitted is displayed as shown in Figure 4B. According to this, the user inputs receivers' phone numbers, and sets an open option for each inputted phone number.

[0036] At this time, if the number of inputted receivers' phone numbers is 10 and the number of opened receivers' phone numbers is 5, a mobile communication terminal which has received said broadcast message displays only said five opened receivers' phone numbers.

[0037] When a setting of the broadcast message content, the receivers' phone numbers, and the open option for each receiver's phone number is completed, a data frame including the message content and the transmitter's phone number and a data frame including the opened receivers' phone numbers are transmitted.

[0038] Herein, even if the opened receiver's phone numbers do not exist, a data frame including a header for a broadcast transmission is transmitted. That is, even though the opened receiver's phone numbers do not exist at the time of transmitting the broadcast message, a data frame allocated to transmit the opened receiver's phone numbers is always transmitted.

[0039] Figure 5 is a flow chart showing a broadcast message receiving process in a mobile communication terminal according to the present invention.

[0040] If the mobile communication terminal receives a message (S21), it is certified whether the message is a broadcast message or not (S22).

[0041] If the message is a broadcast message, the message content, the transmitter's phone number, and the opened receivers' phone numbers are displayed on a display unit of the mobile communication terminal (S23). On the contrary, if the message is a general short message not a broadcast message, the message con-

tent and the transmitter's phone number are displayed on the display unit (S24).

[0042] The user certifies a content of the broadcast message and determines whether to perform a reply for the corresponding message or not (S25). If the user determines to perform the reply, a message is written and a phone number to which a reply message will be transmitted is selected between the transmitter's phone number of the broadcast message and the opened receivers' phone numbers (S26).

[0043] After completing the reply for the broadcast message, the user judges whether to store the transmitter's phone number and the opened receivers' phone numbers or not (S27) and thereby selectively stores the transmitter's phone number and the opened receivers' phone numbers (S28).

[0044] Figures 6A, 6B, and 6C are exemplary views showing a broadcast message receiving process in a mobile communication terminal according to the present invention.

[0045] Referring to Figures 6A to 6C, operation of the present invention will be explained in more detail.

[0046] When a message is received at a mobile communication terminal, it is judged whether the message is a general short message or a broadcast message. Herein, a kind of the received message can be judged by the number of received data frames or information included in a header of the data frame.

[0047] If the received message is a general short message, a content of the message and the transmitter's phone number are detected thus to be displayed on the display unit of the mobile communication terminal.

[0048] However, if the received message is a broadcast message, a content of the message, the transmitter's phone number, and the opened receivers' phone numbers are detected thus to be displayed on the display unit of the mobile communication terminal as shown in Figure 6A. At this time, if the opened receivers' phone numbers do not exist, a preset sentence such as 'There is no opened receiver's phone number' is displayed thereby to inform the user that the received message is a broadcast message.

[0049] The opened receivers' phone numbers can be displayed at a mobile communication terminal to which the broadcast message service method according to the present invention is applied, but can not be displayed at a mobile communication terminal according to the related art to which the present invention has not been applied.

[0050] If the user certifies the broadcast message and inputs a reply command by pressing a predetermined key in order to reply for the received message, as shown in Figure 6B, the transmitter's phone number and a list for the opened receivers' phone numbers are displayed.

[0051] The user selects phone numbers to which a reply for the broadcast message will be transmitted from the phone number list, and inputs a reply message con-

tent thus to transmit. At this time, if the reply message is a broadcast message, the user can set an open option for the selected phone numbers.

[0052] A predetermined phone number included in the list can be stored in a phone directory mounted in the mobile communication terminal by pressing a preset storage key. That is, if a preset storage key is pressed under a state that the broadcast message has been displayed on the display unit of the mobile communication terminal, as shown in Figure 6C, the transmitter's phone number of the broadcast message and the list for the opened receivers' phone numbers are outputted. At this time, if the list includes a phone number identical to a phone number which has been registered in the phone directory of the mobile communication terminal, the corresponding phone number is displayed as information which has been registered in the mobile communication terminal.

[0053] If the user selects phone numbers to be stored from the list and inputs a OK key, the selected phone numbers are registered in the phone directory of the mobile communication terminal. Herein, when the user presses the OK key, a phone number registration window is displayed on the display unit. If the user inputs a name or predetermined information to the phone number registration window and presses the OK key, the corresponding phone number is stored.

[0054] As aforementioned, in the broadcast message service method in a mobile communication terminal according to the present invention, a content of the broadcast message, the transmitter's information, and the opened receivers' phone numbers are displayed at the time of receiving the broadcast message. According to this, other receivers' phone numbers to which the same broadcast message has been transmitted can be certified.

[0055] Also, in the broadcast message service method in a mobile communication terminal according to the present invention, the transmitter's phone number and the opened receivers' phone numbers for the broadcast message can be stored or edited by a receiver's arbitrary handling, and the receiver can selectively transmit a reply message, thereby increasing the user's convenience.

[0056] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the metes and bounds of the claims, or equivalence of such metes and bounds are therefore intended to be embraced by the appended claims.

Claims

1. A broadcast message service method in a mobile communication terminal comprising:

a transmission process for inputting a broadcast message and receivers' phone numbers and setting an open option for each receiver's phone number; and
a reception process for receiving the broadcast message and thus certifying the message content and the opened receivers' phone numbers.

2. The method of claim 1, wherein the transmission process comprises:

inputting a broadcast message and receivers' phone numbers;
setting an open option for each receiver's phone number; and
transmitting the broadcast message to corresponding receivers.

3. The method of claim 1, wherein the broadcast message includes:

a data frame including the message content and the transmitter's phone number; and
a data frame including the opened phone numbers.

4. The method of claim 1, wherein the reception process comprises:

detecting the received broadcast message content, the transmitter's phone number, and the opened receivers' phone numbers; and
displaying the detected contents on a display unit of the mobile communication terminal.

5. The method of claim 1, wherein the reception process further comprises:

selectively replying to the opened receivers' phone numbers; and
selectively storing the opened receivers' phone numbers.

6. A broadcast message service method in a mobile communication terminal comprising:

inputting a message content and receivers' phone numbers;
inputting an open option for each receiver's phone number; and
transmitting the message to each receiver.

7. The method of claim 6, wherein the message in-

cludes:

a data frame including the message content and the transmitter's phone number; and
a data frame including the opened phone numbers.

8. The method of claim 7, wherein the data frame including the opened phone numbers uses a margin field among fields for transmitting the message. 10

9. A broadcast message service method in a mobile communication terminal comprising:

judging whether a received message is a broadcast message or not; 15
if the received message is a broadcast message, detecting opened receivers' phone numbers; and
displaying the detected contents on a display unit of the mobile communication terminal. 20

10. The method of claim 9, further comprising performing a reply for the broadcast message. 25

11. The method of claim 10, wherein the reply for the broadcast message is performed by selectively designating phone numbers from the transmitter's phone number and a list for the opened receivers' phone numbers. 30

12. The method of claim 11, wherein the reply is transmitted by setting an open option for each selected phone number. 35

13. The method of claim 9, further comprising storing phone numbers selected from the transmitter's phone number and a list for the opened receivers' phone numbers. 40

14. The method of claim 9, wherein the step of judging a broadcast message is performed by using the number of data frames included in a message or information included in a header of the data frame. 45

15. A broadcast message service method in a mobile communication terminal comprising:

judging whether a received message is a broadcast message or not; 50
if the received message is a broadcast message, displaying a message content, a transmitter's phone number, and opened receivers' phone numbers on a display unit;
selectively performing a reply for the received message; and 55
storing phone numbers selected from the transmitter's phone number and a list for the opened

receivers' phone numbers.

16. The method of claim 15, wherein the reply process comprises:

writing a message content for the reply;
selecting phone numbers to be transmitted from the transmitter's phone number and the list for the opened receivers' phone numbers of the received message;
setting an open option for the selected phone number; and
transmitting the reply message.

17. The method of claim 15, wherein, if the transmitter's phone number and the opened receivers' phone numbers are phone numbers which have been stored in the mobile communication terminal, the phone numbers are displayed as pre-stored information.

FIG. 1A

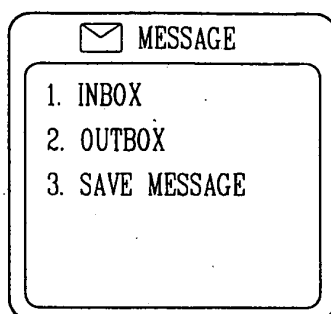


FIG. 1B

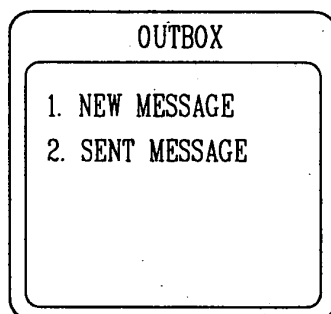


FIG. 1C

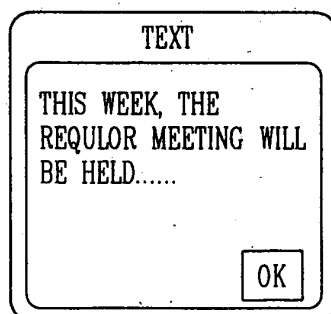


FIG. 1D

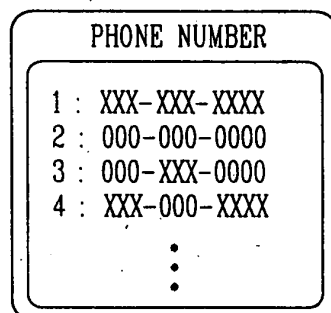


FIG. 2A

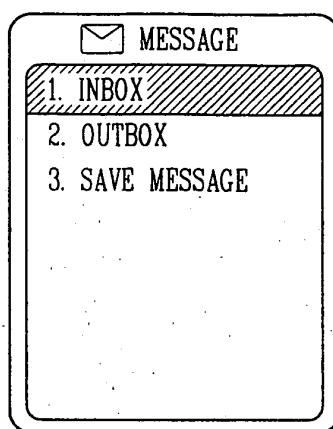


FIG. 2B



FIG. 2C

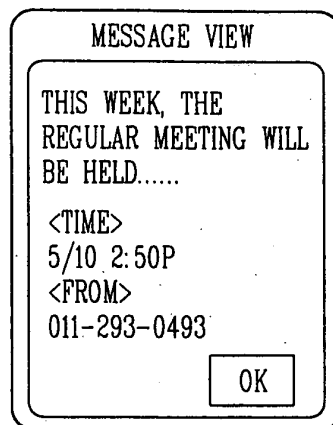


FIG. 3

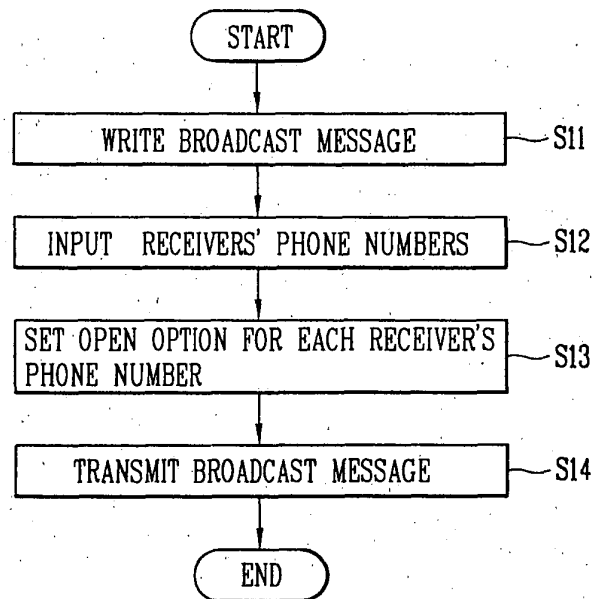


FIG. 4A

TEXT

THIS WEEK, THE
REGULOR MEETING WILL
BE HELD.....

OK

FIG. 4B

PHONE NUMBER

1 :	019-293-5493	<input checked="" type="checkbox"/>
2 :	016-293-0493	<input checked="" type="checkbox"/>
3 :	011-493-4693	<input checked="" type="checkbox"/>
4 :	019-999-9999	<input checked="" type="checkbox"/>

SELECT OK

FIG. 5

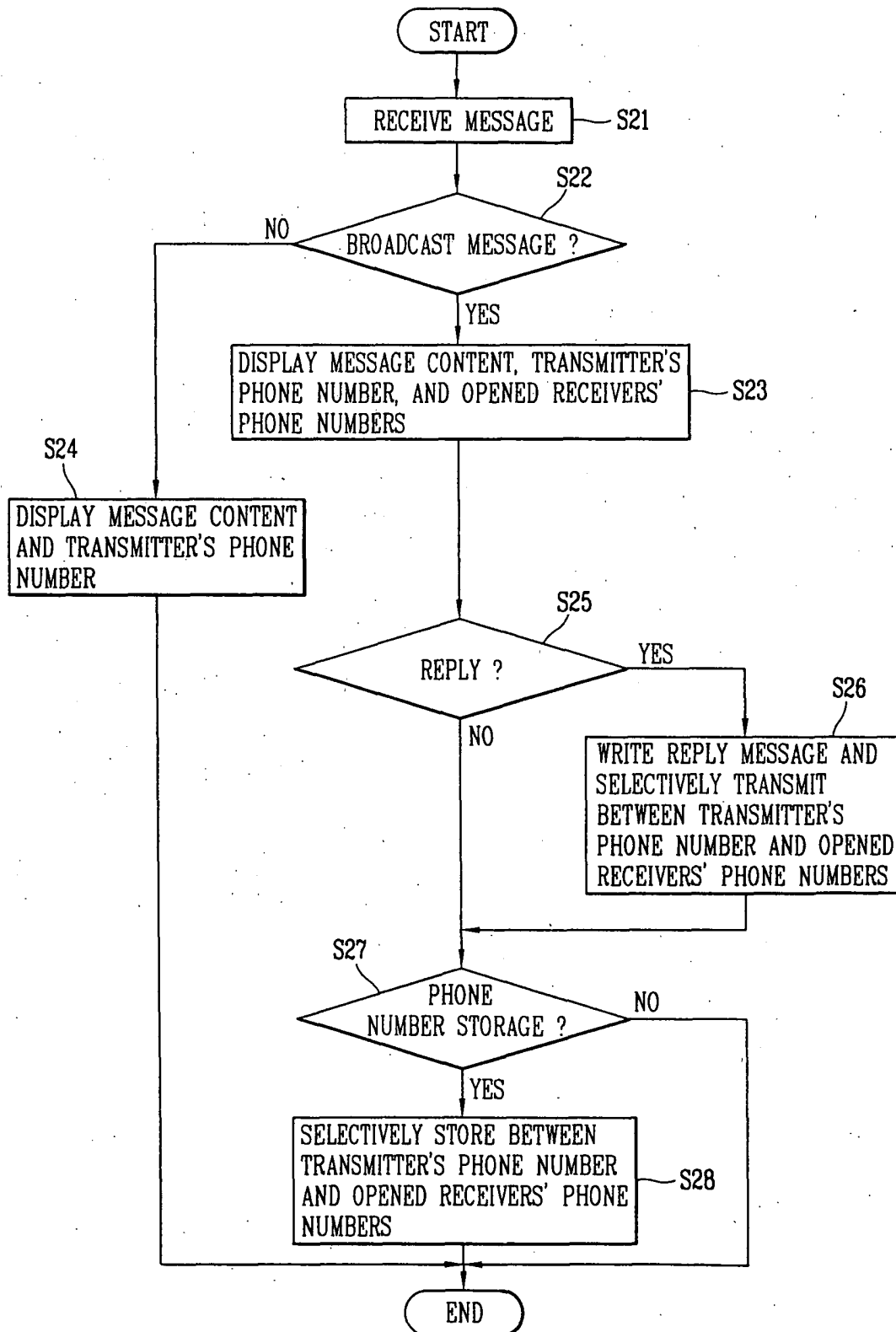


FIG. 6A

MESSAGE VIEW

<TIME>
5/10 2:50 P

<FROM>
011-293-0493

<REFERENCE>
019-293-5493
016-293-0493
011-493-4693

REPLY SAVE OK

FIG. 6B

PHONE NUMBER

☐ 1: 011-293-0493 ☐

☐ 2: 019-293-5493 ☐

☐ 3: 016-293-0493 ☐

☐ 4: 011-493-4693 ☐

SELECT OK

FIG. 6C

PHONEBOOK

1: 011-293-0493 ☐

2: 019-293-5493 ☐

3: 016-293-0493 ☐

4: 011-493-4693 ☐

SELECT OK